

Cannabis or Cannabinoids for the Treatment of Insomnia: An Evidence-Based Review, Conclusions and Recommendations of the Utah Cannabis Research Review Board

The Utah Cannabis Research Review Board recently reviewed the current literature pertaining to cannabis and cannabinoids for the treatment of insomnia. Based on the board's review of current literature and knowledge, the following summary points were made:

- Studies evaluating the impact of cannabis-based treatments on sleep architecture (e.g., stages of sleep by polysomnography) have demonstrated mixed (i.e., conflicting or variable) effects.¹
- Daily use of addictive substances may lead to dependence, increasing the risk for withdrawal symptoms when reducing or stopping use of the substance. One symptom of cannabis withdrawal is disturbed sleep, which manifests similar to insomnia.² Sustained heavy cannabis use, and cannabis withdrawal are associated with sleep impairment.^{3,4}
- Polysomnography is considered the "gold-standard" method for objective assessment of physiologic sleep outcomes. Actigraphy is a less intrusive objective tool, which measures movement using a watch-like device. Self-reported subjective tools (e.g., sleep diaries or questionnaires) also assess sleep outcomes, but some self-report tools are limited by recall bias.^{5,6} Ideally, treatment efficacy clinical trials should use both subjective and objective tools for complementary assessment of insomnia symptoms.^{5,7}
- Few randomized controlled trials (RCTs) have studied insomnia treatment with cannabis or cannabinoids in patients with confirmed insomnia. The majority of higher-quality evidence for treating sleep-related symptoms with cannabis-based products is from secondary outcomes of studies among patients not selected for sleep disturbances (e.g., patients with chronic pain).⁸
- Clinical trials reporting sleep outcomes studied heterogeneous cannabis-based products and doses.^{1,9} Only 1 trial evaluated whole-plant cannabis administered by inhalation.⁹ Other trials studied THC and/or CBD extracts, synthetic THC analogs, or the combination of THC/CBD/CBN, given orally or oromucosally.^{1,9}

- Randomized, cross-over trials among patients with insomnia or self-reported sleep difficulties (n=5) demonstrated mixed effects on sleep.^{10,11} The majority of these clinical trials studied THC-containing products or THC analogs^{10,11} and were rated as having a moderate-to-high risk of bias.¹⁰ Most trials demonstrated modest improvements in self-reported insomnia severity or sleep onset latency; however, 1 trial demonstrated worsened sleep onset latency.¹⁰ The most robust RCT found sublingual cannabinoid extract (THC:CBN:CBD 10:2:1 mg/mL, 0.5–1 mL nightly) improved patient-reported sleep outcomes including insomnia severity and sleep quality, and total sleep time (but not time to falling asleep or number of awakenings per hour) by actigraphy compared to placebo. However, a benefit over placebo was not observed for sleep outcomes measured by polysomnography.¹¹ The most common adverse effects, reported among trials of THC- or THC analog-containing treatments, were mild to moderate dizziness, dry mouth, nausea and headaches.^{10,11} Next day grogginess was reported by 1 THC trial.¹⁰ Trials among people with insomnia/sleep difficulties were limited by small sample sizes (n=9 to n=32), the lack of clinician-diagnosed insomnia, short durations (range from 1 dose to 4 weeks), and use of non-validated and/or subjective-only outcome measures in most trials.
- Cannabis-based treatments may improve sleep in patients with pain-related conditions.⁹
- Abbreviations: CBD, cannabidiol; CBN, cannabinol; RCT, randomized controlled trial; THC, (delta-9)-tetrahydrocannabinol

In addition to reviewing systematic reviews and randomized controlled trials, the Board received feedback from qualifying medical providers who have experience using medical cannabis in their medical practice.

Although cannabis may improve sleep in patients with pain conditions, the Board concluded **that there is insufficient evidence to recommend that insomnia be considered a qualifying medical condition.**

References

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